

**AMENDMENTS TO THE CLAIMS**

The following listing of claims replaces all prior versions and listings of claims in the above-referenced application:

1           1.-3. (Canceled)

1           4. (Currently amended)   A module for converting an optical signal to  
2 a digital signal comprising:

3           an optical filter passing a filtered signal comprising a select range of  
4 frequencies present in an optical signal;

5           a photodiode converting the optical signal to a current;

6           a transimpedance amplifier converting the photodiode current to a voltage at  
7 an output of the transimpedance amplifier;

8           a sawtooth generator producing a sawtooth wave;

9           a synchronization input coupled to the sawtooth generator; ; and

10          a comparator directly coupled to the output of the transimpedance amplifier,  
11 the comparator comparing the sawtooth wave with the output of the transimpedance  
12 amplifier to produce a pulse-width modulated digital output.

1           5.-9. (Canceled)

1           10. (Currently amended)   A method of converting the intensity of an  
2 optical source to a pulse-width modulation signal in a single integrated circuit  
3 comprising:

4           filtering incident light from the optical source such that wavelengths of visible  
5 light impinge a sensor sensitive to a select range of wavelengths, wherein the select  
6 range of wavelengths is associated with one of red, green and blue light;

7           converting the select range of wavelengths of visible light to a current;

8           converting the current to a voltage;

9           generating a sawtooth wave synchronized to an external signal; ; and

10 comparing the sawtooth wave to the voltage without inverting the voltage  
11 representing the select range of wavelengths of visible light to produce a digital pulse-  
12 width modulated output, wherein the steps of converting the current, generating and  
13 comparing are accomplished in a single integrated circuit.

1 11.-12. (Canceled)

1 13. (Currently amended) An apparatus for converting light to a digital  
2 signal comprising:  
3 a single module comprising a ground pin, a single supply pin, a  
4 synchronization pin and an output pin, the module further comprising:  
5 an optical filter passing a filtered signal comprising a select range of  
6 frequencies associated with one of red, green and blue light present in an  
7 optical signal;  
8 a photodiode configured to convert incident light to a current;  
9 a transimpedance amplifier configured to convert the current to a  
10 voltage;  
11 a sawtooth generator configured to produce a sawtooth wave  
12 responsive to a synchronization signal provided via the synchronization pin;  
13 and  
14 a comparator configured to receive the sawtooth wave and the voltage  
15 to produce a pulse-width modulated digital output, wherein an output of the  
16 transimpedance amplifier is directly applied to an input of the comparator.

1 14. (Previously presented) The integrated circuit of Claim 13 where the  
2 module further comprises a single substrate.

1 15. (Previously presented) The integrated circuit of Claim 14 where the  
2 transimpedance amplifier, sawtooth generator, and comparator are implemented on  
3 the single substrate.

1 16. (Canceled)

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- 1           17.   (Previously presented)   The integrated circuit of Claim 13 where the
- 2   transimpedance amplifier is directly coupled to the comparator.